

Types of solids

QUESTION: Justify each of the properties of the following substances

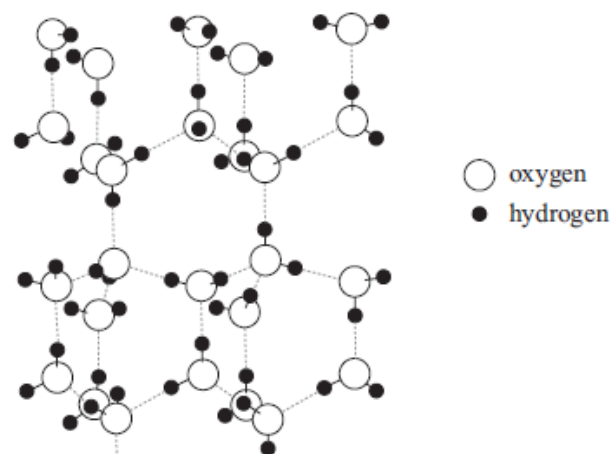
electrical conductivity	melting & boiling points	solubility	malleability
MgO	ice	Mg	Mg
diamond	SiO ₂	SiO ₂	Zn
graphite	Br ₂	Br ₂	ZnCl ₂
copper	NaCl	NaCl	Ag

sulfur	MgCl ₂	MgCl ₂	
MgCl ₂	diamond	Zn	ductility
Pb	MgO	ZnCl ₂	copper
CuCl ₂	SCl ₂	LiCl	hardness
lithium chloride	LiCl	potassium chloride	diamond

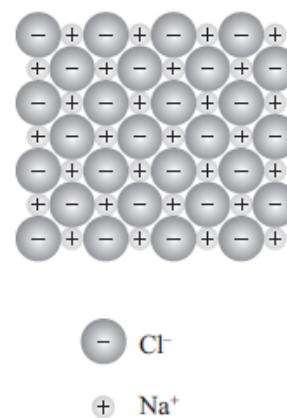
Pb	S ₈	I ₂	graphite
graphite	I ₂	KI	
sodium chloride	KI		
copper	Cl ₂		

ADDITIONAL NCEA EXAMINATION QUESTIONS

1) The diagrams below show structural representations of the two solids ice, H₂O, and sodium chloride, NaCl.



Structure of ice



Structure of sodium chloride

Ice melts at 0°C and sodium chloride melts at 801°C.

On **each** diagram above, circle ONE of the forces of attraction which must be overcome for the substance to melt. Give a reason for your choice.

2) Discuss the reasons why the following two carbon-containing compounds (methane and calcium carbide) have different melting points. The melting points are given in the table below.

Name	Formula	Melting point (°C)
Methane	CH ₄	-182.50
Calcium carbide	CaC ₂	2300.0

Your answer should include:

- the type of particle found in each compound
- the attractive forces found in each compound
- the strength of these attractive forces.